AMENDMENTS TO THE DRAWINGS

Fig. 32 has been amended, as in the attached REPLACEMENT SHEET (EXHIBIT A), by identifying the "POROUS SURFACE ELECTRODE", to address the Examiner's drawing objection.

REMARKS

Claims 1 through 61 are pending in this Application. Fig. 32, the title, the specification, the abstract, and various claims have been amended to address formalistic issues identified by the Examiner, including multiple dependency issues. In addition, Claim 1 has been amended. Care has been exercised to avoid the introduction of new matter. Adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure as, for example, paragraph [0001] of the written description of the specification. Applicants submit that the present Amendment does not generate any new matter issue.

Information Disclosure Statement.

The Examiner indicated that the reference submitted in the Information Disclosure Statement (IDS) identified as JP 2683452 was not considered because the document could not be located.

In response Applicants advise that JP 2683452 is a patent number, the patent having been granted in Japan based on a PCT Application whose Publication No. is WO 94/27929, published December 8, 1994, as indicated on the face page of JP 2683452 wherein PCT Application No. PCT/JP 94/00803 appears. For the Examiner's convenience, submitted herewith is a copy of the face page of Japanese Patent No. 2683452 together with an English language abstract thereof (Exhibit B).

An IDS is being submitted concurrently herewith listing WO 94/27929. Applicants solicit the Examiner to provide an appropriately initialed copy of Form PTO-1449 indicating consideration of all cited references.

Drawing Objections.

The Examiner objected to the drawings pursuant to 37 C.F.R. § 1.183(a), asserting that various features of Claim 62 are not illustrated. In response Claim 62 has been cancelled.

The Examiner also objected to Fig. 32 asserting that it does not include the "porous electrode" mentioned in paragraph [0293].

In response, Applicants note that one having ordinary skill in the art would have recognized from the originally filed disclosure, notably paragraph [0293], that there are two electrodes appearing in Fig. 32, one of which is a surface electrode formed over the entire outer surface of the cylindrical ceramic filter and the other is a back electrode located on the inner walls of the cylinder. Both of these electrodes are porous.

Fig. 32 has been amended to identify the "porous surface electrode" and paragraph [0293] has been amended accordingly. Applicants, therefore, solicit withdrawal of the drawing objections.

Objections to the Specification.

The Examiner asserted that the title of the invention is not descriptive and courteously suggested a new title. In response the title has been amended consistent with the Examiner's suggestion.

The Examiner also objected to the abstract asserting it is being of excessive length and informal. In response a new abstract has been provided.

Based upon the foregoing, Applicants solicit withdrawal of the objections to the specification.

Claim Objections.

The Examiner objected to Claims 6 through 28, 34 through 45, and 48 through 60, asserting improper multiple dependencies. In response the claims have been amended to address the multiple dependency issues, thereby overcoming the stated bases for the objection to Claims 6 through 28, 34 through 45, and 48 through 60.

The Examiner also objected to Claims 3, 4, and 54, asserting that a wavelength must be one discrete value not a range. This objection is traversed, because one having ordinary skill in the art could not possibly have misinterpreted the claimed wavelength as a range rather than a single wavelength within a range. At any rate, in order to expedite prosecution, Claims 3, 4, and 54 have been amended consistent with the Examiner's suggestion, thereby overcoming the stated basis for the objection to Claims 3, 4, and 54.

The Examiner also objected to Claims 7, 14, 15,18, 37, and 57, asserting improper units. In response these claims have been amended to address the issue raised by the Examiner, thereby overcoming the stated basis for the objection to Claims 7, 14, 15,18, 37, and 57.

The Examiner objected to Claim 29 asserting that the filtering and deposition should be recited as a single manipulation rather than two manipulations. In response, Claim 29 has been

amended consistent with the Examiner's suggestion, thereby overcoming the stated basis for the objection to Claim 29.

Based upon the foregoing Applicants solicit withdrawal of the claim objections.

Claim 3 was rejected under the first paragraph of 35 U.S.C. § 112 for lack of adequate enabling support.

In the statement of rejection the Examiner asserted that a "wavelength of 200 to 400 nm" is without supporting examples or data. This rejection is traversed.

Lack of enablement under the first paragraph of 35 U.S.C. § 112 is a question of law. *U.S. Steel Corp. v. Philips Petroleum Co., 865 F.2d 1247, 9 USPQ2D 1461 (Fed. Cir. 1989); U.S. v. Telectronics Inc., 857 F.2d 778, 8 USPQ2d 1217 (Fed. Cir. 1988).* In rejecting a claim under the first paragraph of 35 U.S.C. § 112 for lack of adequate enabling support, it is incumbent upon the Examiner to establish a basis in fact and/or cogent technical reasoning to support the ultimate legal conclusion that one having ordinary skill in the art would not be able to practice the claimed invention, armed with the supporting specification, without undue experimentation. *In re Cortright, 165 F.3d 1353, 49 USPQ2d 1464 (Fed. Cir. 1999); In re Brana, 51 F.2d 1560, 34 USPQ2d 1436 (Fed. Cir. 1995); In re Marzocchi, 439 F.2d 220, 169 USPQ 367 (CCPA 1971).* Applicants emphasize that a patent disclosure is directed to one having ordinary skill in the art. *In re Howarth, 654 F.2d 103, 210 USPQ 589 (CCPA 1981).* Moreover, and quite significantly, it has been repeatedly held that the scope of enablement varies inversely with the degree of predictability in the art, i.e., enablement is a function of the complexity of the involved subject matter. *Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d*

931, 15 USPQ2d 1321 (Fed. Cir. 1990); U.S. v. Teletronics Inc., supra. Applicants stress that a patent specification is presumed enabling in the absence of a reason to doubt the objective truth of the statements contained therein. *In re Cortright, supra; In re Brana, supra; In re Marzocchi, supra.*

In applying the above legal tenets to the exigencies of this case, Applicants submit that the Examiner did not establish a *prima facie* basis to deny patentability to the claimed invention under the first paragraph of 35 U.S.C. § 112 for lack of adequate enabling support. Specifically, the Examiner has not overcome the presumption of enablement, as by advancing technological reasoning to doubt the statements in the specification, or by establishing that the claimed invention is inherently unbelievable or involves implausible scientific principles. *In re Cortright, supra.*

Indeed, the Examiner has not explained **why** one having ordinary skill in the art would not have been able to practice the claimed invention, without undue experimentation, given the disclosed guidance. It is inconceivable that one having ordinary skill in the art would not have been able to select materials having a wavelength within the range of 200 to 400 nm, given the disclosed examples within that range, bearing in mind that a specification must be presumed enabling in the absence of cogent technological reasons to establish otherwise. *In re Brana, supra.*

Further, and again to expedite prosecution, submitted herewith as Exhibit C is a technical paper "Nature Vol. 41/18 May 2006" showing an example of an LED using AlN that exhibits a light emission of 210 nm. This should put to bed the notion of lack of enablement.

Based upon the foregoing Applicants submit that the imposed rejection of Claim 3 under the first paragraph of 35 U.S.C. § 112 for lack of adequate enabling support is not legally viable and, hence, solicit withdrawal thereof.

Claims 1 through 5 were rejected under 35 U.S.C. § 102 for lack of novelty as evidenced by Kumomi et al.

In the statement of rejection the Examiner referred to Fig. 1 in rejecting Claim 1. The Examiner admitted that as to Claims 2 through 4, Kumomi et al. do not limit the porous semiconductor to any particular material. The Examiner then asserted that Kumomi et al. encompass all well known porous materials. This rejection is traversed.

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed into the recognized possession of one having ordinary skill in the art. *Dayco Prods., Inc. v. Total Containment, Inc., 329 F.3d 1358, 66 USPQ2d 1801 (Fed. Cir. 2003); Crown Operations International Ltd. v. Solutia Inc., 289 F.3d 1367, 62 USPQ2d 1917 (Fed. Cir. 2002).* When imposing a rejection under 35 U.S.C. § 102, the Examiner is required to specifically identify wherein an applied reference is asserted to identically disclose each and every feature of a claimed invention, particularly when such is not apparent as in the present case. *In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984).* That burden has not been discharged.

Claims 2 through 4.

As apparently acknowledged by the Examiner, the scope of Kumomi et al. is extremely broad. This alone is sufficient to preclude the factual determination of lack of novelty under 35 U.S.C. § 102 which requires the identical disclosure in a single reference of each element of a claimed invention, without undue selectivity. *Air Products & Chemicals, Inc. v. Charles S. Tanner Co., 219 USPQ 223 (D.S.C. 1983).*[1]

Independent Claim 1

Independent Claim 1 has been clarified by reciting that the porous semiconductor must be capable of filtering, sterilizing, and decomposing organic matter. There is no apparent factual basis upon which to predicate the conclusion that any such capability is inherent, i.e., is **necessarily** present, in the porous semiconductors disclosed by Kumomi et al. There is absolutely no guidance to select any materials which would provide that function.

Further, it should be apparent that Kumomi et al. disclose a light emitting device which employs a luminous porous material comprising a crystalline semiconductor. As one having ordinary skill in the art would have recognized, such a disclosed device necessarily has a non-porous region adjacent to the porous luminescent region (column 2 of Kumomi et al., lines 36 through 40). The non-porous region is employed for electrodes. The fundamental structure of the device disclosed by Kumomi et al. is that the porous semiconductor is sandwiched by non-porous electrodes. Ergo, one having ordinary skill in the art would have recognized that the total structure of Kumomi et al.'s device cannot be used for a filter.

[1] Indeed, the disclosure of Kumomi et al. is so broad as to undermine any obviousness conclusion under 35 U.S.C. § 103 for lack of the requisite guidance. *In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); In re Baird, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1985).*

Further, in accordance with the present invention, the porous semiconductor comprises a porous substrate and a porous semiconductor layer in order to filter liquids efficiently. If the substrate is electroconductive, the substrate itself can be used as a porous electrode. The substrate also functions as a base to carry or fabricate the porous semiconductor layer, as disclosed in paragraph [0087] of the written description of the specification.

In contradistinction to the present invention, Kumomi et al. neither disclose nor suggest a substrate having the function of an electrode or a base. Kumomi et al. simply disclose that the luminous region may be formed of plural porous or non-porous regions of different structure (column 5, lines 3 and 4). One having ordinary skill in the art would not have garnered from the disclosure of Kumomi et al. that the substrate is porous.

The above argued differences between the claimed invention and the device of Kumomi et al. undermine the factual determination that Kumomi et al. disclose a porous semiconductor identically corresponding to that claimed. *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc., 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986).* Applicants, therefore, submit that the imposed rejection of Claims 1 through 5 under 35 U.S.C. § 102 for lack of novelty as evidenced by Kumomi et al. is not factually viable and, hence, solicit withdrawal thereof.

Applicants acknowledge, with appreciation, the Examiner's allowance of Claims 29 through 33, 46, 47, 61, and 62. Based upon the arguments submitted *supra*, it should be apparent

that the imposed objections and rejections have been overcome, and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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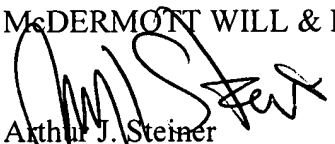

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